ric perspective provides an intellectual home for the reproduction and standardization of clinical intuitions, such as subtyping and staging (10). A large amount of clinical research is derivative: methods are often applied in clinical studies simply because they have become available. If the clinical problem itself is poorly defined, the focus of neurobiological research is set for random effort and misunderstanding.

Engel (11) identified the key characteristic of clinical science in its explicit attention to humanness, where observation (outer-viewing), introspection (inner-viewing) and dialogue (interviewing) are the basic methodological triad for clinical assessment and for making patient data scientific. The exclusion of this interaction by medical science's continuing allegiance to a 17th century scientific world view makes this approach unscientific. Unlike 20th century physics, "the human realm either has been excluded from accessibility to scientific inquiry or the scientific approach to human phenomena has been required to conform to the reductionistic, mechanistic, dualistic predicates of the biomedical paradigm" (11). This restrictive ideology characterizes the Research Domain Criteria. It is time to substitute the fashionable popularity of strategies developed outside of psychiatry with creative research based on the insights of clinical judgment.

A major problem in the development of the Research Domain Criteria project has been the fact that its strong ideological endorsement by leading figures of the National Institute of Mental Health has resulted in suppression of an adequate debate. How many investigators who are likely to submit funding applications to that agency may afford disclosing that the emperor has no clothes and that the strategy may be a road to nowhere?

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# The only one or one of many? A comment on the RDoC project

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It is always a surprise and a pleasure to see a meaningful coincidence in science and medicine, such as the publication of the article by B. Cuthbert (1) on the 100th anniversary of the first edition of Karl Jaspers' monumental work on psychopathology (2). H. Helmchen (3) called Jaspers' book "the methodological conscience of psychiatry" for a reason that is directly relevant to the RDoC approach which Cuthbert describes: Jaspers advocated a methodologically clearly defined descriptive as well as interpretative approach to the total of the psychopathological phenomena seen in their psychological, biological and social contexts and in the light of their consequences.

Cuthbert states that the goal of the RDoC approach is to "develop for research purposes new ways of classifying mental disorders based on dimensions of observable behavior and neurobiological measures". While the in-depth exploration of dimensions of behavior as well as the use of neurobiological measures in studying mental functioning are both laudable approaches, the ultimate goal of the RDoC project does need additional and more careful attention: is the RDoC about to develop a classification for research that will be different from the classification of mental disorders for clinical work? And from some other classification that will be recommended for use in training different categories of staff in mental health services? And will this RDoC based classification be the only one that will have to be used when applying for grants of one of the mightiest non-commercial sources of support to research in psychiatry? Clinical practice operating with diagnosis based on symptoms emerging from observation and patients' reports has in all fields of medicine been a source of inspiration for researchers: will it be possible to translate ideas gained in the clinical field using diagnosis into hy-

potheses whose confirmation will be based on RDoC matrices?

And the RDoC approach, if understood in this way, also raises the question of the best way to satisfy Jaspers' requirement that we should not only describe but also try to understand and interpret the meaning of the components of psychopathology in their social, biological and psychological context. The study of dimensions and their measurement are only the beginning of the process of approaching the creation of meaningful prototypes corresponding to individuals in their context. It is to be hoped that the RDoC project has foreseen a way to do this, starting with it in parallel to the acquisition of data about the research domains.

Another issue that should be kept in mind is the emphasis on the collection of data concerning the domains that have been defined on the basis of a consensus of a limited number of experts who met in 2009. The consensus which they reached directed the work of five workshops that followed the first meeting in order to define the dimensions to be included in the domain, provide definitions of these dimensions and specify elements that could be used to characterize each dimension. It is possible that another group of experts would have selected another set of domains which would have oriented the research into another direction. This is particularly true for the domain of "systems for social processes" but also holds, possibly to a lesser degree, for the domains of "positive valence systems" and "negative valence systems". The workshop participants also "nominated and vetted" the various classes of measurement. There is nothing basically wrong with this approach, unless working along those lines uses all the available resources and the approach becomes the dominant theme for the National Institute of Mental Health, which has been such a very important player in the governance of research and its orientation not only in the USA but also globally. Another group might perhaps choose a different set of domains, containing a different set of dimensions, possibly more helpful: there should be room and support for such a project. It will therefore be important to remember that the basic premise of the RDoC project is the consensus of a relatively small group of experts about the area that should be explored.

A third important issue which is not explicitly addressed in the fine paper that Cuthbert has written is that of measuring the development of the units of analysis over time. Physiological indicators related to "acute threat" and any other dimension included in the RDoC change over time, and the longitudinal profile of this change might be just as revealing as its correlation with other factors and characteristics of the individual. To capture the impact of these factors, it would probably be useful to construct a three-dimensional matrix involving domains, manners of investigation, and age, gender and other characteristics of the persons whose dimensions are being measured, all of this along the axis of time and longitudinal development of the phenomenon.

The same argument applies, in a slightly different form, to the decision to avoid funding research that will be based on DSM or ICD diagnostic categories. Research using categories created on the basis of observations of behavior and the development of the disorder over time is as justified as other approaches. Diagnostic categories have never been more than hypotheses about the nature of the disorder that medical practitioners meet. These hypotheses should continue to be explored and their definitions should continue changing over time and in the light of information about the reaction of the disorders to treatment, about long-term outcome, about brain structures and functions recorded by modern means.

In summary, we should congratulate the National Institute of Mental Health and thank it for deciding to fund work proceeding along a well-defined new avenue of research, hoping at the same time that this departure will not block the funding of alternative ways of examining human behavior and its basis in health and in disease.

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# An integrative approach to psychiatric diagnosis and research


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Much attention has been paid to revisions of psychiatric classification systems. Nevertheless, there remains significant dissatisfaction with the nosology. From a neuroscience perspective, diagnostic criteria have failed to incorporate neurobiological data, and a focus on "circuit-based behavioral dimensions" (1) will improve diagnosis. From a more critical perspective, given that psychiatric disorders do not represent valid disease entities (1), diagnosis merely medicalizes problems in living.

These specific debates echo larger debates about classification in medicine, in which many emphasize notions of disease, arguing that clinicians must